THERMOCHIMICA ACTA, VOLUME 134 (1988)

AUTHOR INDEX

Anžur, I. 217
Arellano, J. 365
Azumi, T. 383

Bachman, B.J. 145
Barboiu, V. 301
Bello, A. 155,195
Bent, T.J. 401
Bogdanov, B.G. 121
Brine, C.J. 275
Brown, M.E. 413

Cadenato, A. 261
Carlsen, L. 321
Caslavsky, J.L. 371,377
Chang, Youming 107
Cheng, S.Z.D. 161
Criado, J.M. 365
Cui, Guo-Liang 313

D'Souza, J.A. 255
Daringa, M. 167,177
Dokić, P. 91
Dumitriu, Cr. 177
Dumitriu, M. 167,177
Dumitriu, S. 167

Eder, M. 133
Egsgaard, H. 321
Elder, J.P. 41
Ennis, B.C. 187

Ficara, M.L.G. 435
Fleming, R.J. 15
Florea, M. 301
Flynn, J.H. 115, 401
Flynn, R.M. 401

Gandopadhyay, P.K. 419
Ganju, D. 301
Garti, N. 97
Gast, Th. 395
Gonzalez, C.C. 195
Guo-Liang Cui 313
Gupta, R.N. 419

Haas, W.E. 307
Haines, P.J. 201
Hirano, K. 389
Hoinkis, E. 395
Horrocks, R.A. 255
Hosoi, T. 407
Houlihan, F.M. 145
Howell, B.A. 207
Hu, Rongzu 429

Irabien, J.A. 441
Ishikiriyama, K. 407

Jansen, J.A.J. 307
Jovanović, S. 91
Jun Zheng 233

Kato, R. 383,389
Kopsch, H. 353
Kramer, R. 327
Krishnan, K. 231

Leal, J.A. 61
Leenen, A.J.H. 307
Levy, M. 327
Liang, Yanjun 429
Liu,Tongming 107
Lixandru, T. 177

Maesono, A. 383,389
Malavašič, T. 139,217,237
Manand Niang 107
Margomenou-Leonidopoulou, G. 49
Martin, C.A. 27,35
Martin, J.L. 261
Martin-Gil, F.J. 55,61,67,73
Martin-Gil, J. 55,61,67,73
Martinez-Alonso, A. 333
Michailov, M.Chr 121
Mingbi Qi 223
Monti, G.A. 27,35
Moreira, E. 435
Moroi, G. 301
Morris, C.E.M. 187
Müller, U. 395

THERMOCHIMICA ACTA, VOLUME 134 (1988)

AUTHOR INDEX

Anžur, I. 217
Arellano, J. 365
Azumi, T. 383

Bachman, B.J. 145
Barboiu, V. 301
Bello, A. 155,195
Bent, T.J. 401
Bogdanov, B.G. 121
Brine, C.J. 275
Brown, M.E. 413

Cadenato, A. 261
Carlsen, L. 321
Caslavsky, J.L. 371,377
Chang, Youming 107
Cheng, S.Z.D. 161
Criado, J.M. 365
Cui, Guo-Liang 313

D'Souza, J.A. 255
Daringa, M. 167,177
Dokić, P. 91
Dumitriu, Cr. 177
Dumitriu, M. 167,177
Dumitriu, S. 167

Eder, M. 133
Egsgaard, H. 321
Elder, J.P. 41
Ennis, B.C. 187

Ficara, M.L.G. 435
Fleming, R.J. 15
Florea, M. 301
Flynn, J.H. 115, 401
Flynn, R.M. 401

Gandopadhyay, P.K. 419
Ganju, D. 301
Garti, N. 97
Gast, Th. 395
Gonzalez, C.C. 195
Guo-Liang Cui 313
Gupta, R.N. 419

Haas, W.E. 307
Haines, P.J. 201
Hirano, K. 389
Hoinkis, E. 395
Horrocks, R.A. 255
Hosoi, T. 407
Houlihan, F.M. 145
Howell, B.A. 207
Hu, Rongzu 429

Irabien, J.A. 441
Ishikiriyama, K. 407

Jansen, J.A.J. 307
Jovanović, S. 91
Jun Zheng 233

Kato, R. 383,389
Kopsch, H. 353
Kramer, R. 327
Krishnan, K. 231

Leal, J.A. 61
Leenen, A.J.H. 307
Levy, M. 327
Liang, Yanjun 429
Liu,Tongming 107
Lixandru, T. 177

Maesono, A. 383,389
Malavašič, T. 139,217,237
Manand Niang 107
Margomenou-Leonidopoulou, G. 49
Martin, C.A. 27,35
Martin, J.L. 261
Martin-Gil, F.J. 55,61,67,73
Martin-Gil, J. 55,61,67,73
Martinez-Alonso, A. 333
Michailov, M.Chr 121
Mingbi Qi 223
Monti, G.A. 27,35
Moreira, E. 435
Moroi, G. 301
Morris, C.E.M. 187
Müller, U. 395

Musil, V. 139

Nabiullah, Md. 419
Neubert, D. 291
Neutkens, H.G.M. 307
Niang, Manand 107
Ninan, K.N. 231

Odding, C.R.I. 445
Odlyha, M. 85, 457
Ohshima, T. 389
Okamoto, H. 389
Onu, P. 301
Ortiz, M.I. 441
Osredkar, U. 217

Pastravanu, M. 177
Pearce, P.J. 187
Perdih, A. 237
Pereña, J.M. 195
Perez, E. 155
Popa, M. 167
Popescu, M. 243, 339
Popovic, I.G. 127
Porter, R.S. 251
Pregrad, B. 139

Qi, Mingbi 223
Qi, Zongneng 223

Ramis, X. 261
Ramos-Sanchez, C. 55,61,67
Rasulić, G. 91
Real, C. 365
Rey, F.J. 55,67,73
Robens, E. 395
Rodriguez-Mendez, L. 55,73
Rodriguez-Mendez, M.L. 67
Rongzu Hu 429
Rugunanan, R.A. 413

Sabliovschi, M. 301
Schlichter Aronhime, J. 1
Schneider, O. 269
Sekino, S. 383
Selinger, E. 275
Selivansky, D. 283
Sella, J.M. 261
Sharon, S. 347
Shelef, R. 97
Sickfeld, J. 291
Simion, A. 243,339
Simionescu, Cr.I. 301
Simpson, C.F. 457
Singh, B. 419
Skala, D. 353
Skinner,G.A. 201
Sokić, M. 353
Stoyanova, M.G. 121

Taniguchi, K. 407
Tascon, J.M.D. 333
Tiunova, I. 79
Todoki, M. 407
Tongming Liu 107

Vasile,C. 301
Vennekens,M.J.A. 445
Vizovišek, I. 217,237
Vogel, K. 451

Wang, Wei 223
Wang, Wen-Ju 313
Wei Wang 223
Wen-Ju Wang 313
Widmann, G. 451
Wieckowska, J. 359
Włochowicz, A. 133
Wunderlich, B. 161

Xiaonan Xu 223
Xu, Xiaonan 223

Yang, Zhengquan 429
Yanjun Liang 429
Youming Chang 107

Žerjal, B. 139
Zhang, Zhongliang 107
Zheng, Jun 223
Zhengquan Yang 429
Zhongliang Zhang 107
Zongneng Qi 223

THERMOCHIMICA ACTA, VOLUME 134 (1988)

SUBJECT INDEX

Acetazolamide, macromolecular drugs, retarded, 167
Acrylic acid copolymer type, macromolecular drugs, retarded, 167
Adduct polymers, thermal characterisation, 231
Adhesives, 187
Ageing effects of oriented polypropylene, 255
Agfa 10, thermal analysis by DSC, 107
Amino acids, DTG and DTA studies, 73
Aminosugars, DTG and DTA studies, 67
Ammonium salts, thermal behavior, 49
Amorphous polyesters, 251
Ampiciline, macromolecular drugs, retarded, 167
Anthracene, application of thermal methods for analysis of, 79
Automated moisture evolution analysis (MEA), 407
Bismaleimide-diamine adduct polymers, thermal characterisation, 231
Black powder and its constituents, pyrotechnic reactions, 413
Burning characteristics of combustible materials, 339
Calorimetric analysis of the curing behavior of polyester, 261
Canola oil, hydrogenated, 97
Carbon black, burning characteristics of the combustible materials, 33
Carbon fiber composite, isothermal crystallization, 223
Catalytic pyrolysis of polymers, 301
Cellolignine, burning characteristics of the combustible materials, 339
Chitin-glucans, fungical polysaccharides, DTG and DTA studies, 61
Coal, brown, reactivity with dioxygen and radiofrequency-activated oxygen, 333
Coal, thermal analysis, advantages and disadvantages, 359
Coatings, epoxy powder, thermal analysis, 291
Combustible materials, carbon black and cellolignine, 339
Combustion of industrial waste materials, an equilibrium analysis, 347
Combustion, 333, 339, 347, 359
Conductivity, thermally stimulated processes in organic polymers, 15
Constant rate thermal analysis (CRTA) under flow of gases, 365
Constant rate thermal analysis (CRTA), a new equipment, 365
Controlled release delivery polymer systems, 275
Crystalline polyesters, 251
Crystallization kinetics of dyed nylon 6, 133
Crystallization kinetics of PP/$CaCO_3$ and PP/EPDM/$CaCO_3$ composites, 139
Crystallization, isothermal, poly(ether-ether-ketone), 223
Cure behavior, polyamic acid esters, characterized by TGA, 145
Cure conditions, epoxide film adhesives, thermal analysis, 187
Curing and decomposition of methyl silicone resin, 269
Curing behavior of an unsaturated polyester resin, 261
Curing reagent system for epoxy resins, 313
Decomposition of methyl silicone resin, 269
Defect site responsible for Saran degradation, 207
Density determination, weighing in free suspension, 395
Depolarization, thermally stimulated processes in organic polymers, 15
Determination of high sulfur content by DSC, 435
Determination of the principal defect site responsible for Saran degradation using thermogravimetric analysis, 207
Dichlorobenzene, 35
Dicyandiamine, potential curing reagent for epoxy resins, 313
Diffusion barriers in controlled release delivery polymer systems, 275
Dilatometer, interferometric, laser, application to low expansion materials, 383
Disaccarides, DTG and DTA studies, 55
Dodecyl quaternary ammonium salts, thermal behavior, 49
DSC and reflected light intensity measurements of polymers, simultaneous, 201
DSC for high heating and cooling rate measure-

ments, 389
DSC in the study of polymorphic transformations, 1
Dynamical analysis of the specific heat in p-dichlorobenzene, 35
Eicosane, application of thermal methods for analysis of, 79
Electromagnetic suspension balance, 395
Emulsifiers, thermal behaviour, 91
Enzyme, rate controlling in cholesterol biosynthesis, 41
Epoxide film adhesives, thermal analysis, 187
Epoxy powder coatings, thermal analysis, 291
Epoxy resins, curing reagent system, 313
3-ethyl-5-(2-(3-ethyl-2-benzothiazolinylidene)-ethylidene)-rhodanine, 107
Ethyl methacrylate, polymerization in different solvents, 217
Explosives, commercial, thermal behaviour, 419
Explosives, reaction between RDX and urea, 429
Film-forming polymers, 243
Fungical polysaccharides, DTG and DTA studies, 61
Glass transition of poly(ditrimethylene terephthalate), 195
Glass transition temperatures of substituted polyoxetanes, 155
Glucomannans, fungical polysaccharides, DTG and DTA studies, 61
Heat capacity, thermoplastic polymers, thermal analysis, 161
Heptadecane, application of thermal methods for analysis of, 79
Hexadecane, application of thermal methods for analysis of, 79
High heating and cooling rates, DSC measurements, 389
Hydrogen bonds, di-n-dodecyl quaternary ammonium salts, 49
Industrial waste materials, combustion, 347
Initiators, decomposition, 237
Interferometric dilatometer, application to low expansion materials, 383
Kerogen, oil shale pyrolysis, kinetic investigation, 353
Kinetic investigation, oil shale pyrolysis, 353
Kinetic parameters for thermodestruction of polymers, 177
Kinetics of non-isothermal crystallization, 121
Kinetics, crystallization of dyed nylon 6, 133
Kinetics, crystallization, PP/$CaCO_3$ and PP/EPDM/$CaCO_3$ composites, 139
Kinetics parameters and degradation mechanism of polymers, 115
Kinetics, thermal degradation of poly(dihexyl itaconate), 127
Lifetime prediction for polymers from thermal analytical experiments, 115
Linseed oil, characterisation by DSC, 85
Liquid crystalline polyesters, 251
Long-chain di-n-dodecyl quaternary ammonium salts, thermal behavior, 49
Lovastatin, thermal behavior, 41
Low expansion materials, laser interferometric dilatometer, 383
Luminescence, thermally stimulated processes in organic polymers, 15
Macromolecular drugs, retarded, thermal analysis methods, 167
Mathematical modelling of industrial reactions using thermoanalytical methods, 441
Methyl methacrylate, polymerization in different solvents, 217
Methyl silicone resin, thermoanalytical investigations, 269
Modification in thermal decomposition products of polymers, 301
Modified porous silica powders, DSC study, 457
Moisture evolution analysis (MEA), 407
Monosaccarides, DTG and DTA studies, 55
Neomycine, macromolecular drugs, retarded, 167
Nitrofurane, macromolecular drugs, retarded, 167
Nucleosides and nucleotides, DTG and DTA studies, 67
Nylon 6, 133
O/W emulsion, thermal behaviour, 91
Oil shale pyrolysis, different kerogen type samples, 353
Oil shales, comparative TGA and DSC studies, 327
Oils and oil products, application of thermal methods for analysis of, 79
Oligoethylenetetraphthalate-oligooxyethylene block copolymers, 121
Oligosacharides, DTG and DTA studies, 55
On-line thermal desorption-GC-FTIR-MS, 307
Optical differential thermal analysis (ODTA), applications, 377
Optical differential thermal analysis (ODTA), principals, 371
Outgassing processes of plastics and rubbers, 307
Oxidative degradation of polymers, 115
Oxydianiline/pyromellitic dianhydride polyamic

acid esters, 145
Oxygen, radiofrequency-activated, reactivity of brown coal, 333
Paint films, aged, characterisation by DSC, 85
Perfume oil, application of thermal methods for analysis of, 79
PET high speed spun yarns, thermal shrinkage stress relaxation, 283
Plastics, temperature controlled outgassing, 307
Poly(dihexyl itaconate), 127
Poly(ditrimethylene terephthalate), glass transition, 195
Poly(ether-ether-ketone), isothermal crystallization, 223
Polyamic acid esters characterized by thermogravimetric analysis, 145
Polyazines and polyazomethines. thermal stability, 177
Polyester resin, unsaturated, calorimetric analysis, 261
Polyesters: phase behavior in binary blends, 251
Polymerization of methyl methacrylate and ethyl methacrylate, 217
Polymers, 15, 115, 121, 127, 133, 139, 145, 155, 161, 167, 177, 187, 195, 201, 207, 217, 223, 231, 237, 243, 251, 255, 261, 269, 275, 283, 291, 301, 307, 313,
Polymorphic transformations, triglycerides, 1
Polymorphic transitions in hydrogenated canola oil, 97
Polyoxetanes, glass transition temperatures, 155
Polypropylene, oriented, thermal ageing effects, 255
Polysaccharides, DTG and DTA studies, 55, 61
Polysaccharidic macromolecular support, macromolecular drugs, 167
Poppyseed oil, characterisation by DSC, 85
Pore determnation, weighing in free suspension, 395
Porous silica powders, DSC study, 457
PP/CaCO3 and PP/EPDM/CaCO3 composites, crystallization kinetics, 139
Pyrolysis, 321, 327, 353
Pyrolysis, catalytic, polymers, 301
Pyrolysis, low-pressure and high-pressure, 321
Pyrolysis, oil shale, kinetic investigation, 353
Pyrotechnic reactions of black powder and its constituents, 413
Quick-drying polymers, 243
RDX, reaction with urea, 429
Reflected light intensity measurements and DSC of polymers, simultaneous, 201
Release, controlled, polymer systems, 275
Rhodanine, thermal analysis by DSC, 107
Rubbers, temperature controlled outgassing, 307
Safety screening of chemicals, DSC study, 451
Silica powders, DSC study, 457
Sorbitan monostearate, food emulsifier, 97
Specific heat, 1,1,1-trichloroethane, 27
Specific heat, p-dichlorobenzene, 35
Spun yarns, 283
Stimulated processes in organic polymers, 15
Streptomycine, macromolecular drugs, retarded, 167
Sugar alcohols, DTG and DTA studies, 67
Sugar derivatives, DTG and DTA studies, 67
Sugars, DTG and DTA studies, 55
Sulfur content, determination by DSC, 435
Surface area, weighing in free suspension, 395
Surfactants, 97
Surfactants, effects on the polymorphic transformations of glycerides, 1
Temperature response, comparison within and between power compensated and differential temperature DSC instruments, 401
Terephthalate-ditrimethylene, glass transition, 195
Tetracosane, application of thermal methods for analysis of, 79
Thermal analysis in water treatment related problems, 445
Thermal behaviour of black powder and its constituents, 413
Thermal behaviour of some commercial explosives, 419
Thermal decomposition products of polymers, modification, 301
Thermal shrinkage stress relaxation in PET high speed spun yarns, 283
Thermally stimulated processes in organic polymers, 15
Thermogravimetry, weighing in free suspension, 395
Thermoplastic polymers, thermal analysis, 161
Transreaction, amorphous, crystalline and liquid crysrtalline polyesters, 251
Trichloroethane, 27
Trioctyl methyl ammonium salts, effect on decomposition of initiators, 237
Unsaturated polyester resin, curing behavior, 261
Urea, reaction with RDX, 429
Walnut oil, characterisation by DSC, 85
Waste materials, combustion, 347
Water treatment related problems, 445
Waterproof polymers, 243

CONTENTS

PART B

Preface VII

ORGANIC CHEMISTRY AND POLYMER SCIENCE

Application of thermal analysis (DSC) in the study of polymorphic transformations (1988 ICTA Young Scientist's Award Paper)
J. Schlichter Aronhime (Israel) 1

Thermally stimulated processes in organic polymers (Invited Lecture)
R.J. Fleming (Australia) 15

Organic Compounds, Physical and Colloid Organic Chemistry:

Specific heat analysis in 1,1,1-trichloroethane
C.A. Martin and G.A. Monti (Argentina) 27

Dynamical analysis of the specific heat in p-dichlorobenzene
C.A. Martin and G.A. Monti (Argentina) 35

The thermal behavior of Lovastatin
J.P. Elder (USA) 41

Thermal behavior of some long-chain di-n-dodecyl quaternary ammonium salts
G. Margomenou-Leonidopoulou (Greece) 49

DTG and DTA studies on typical sugars
C. Ramos-Sanchez, F.J. Rey, L. Rodriguez-Mendez, F.J. Martin-Gil and J. Martin-Gil (Spain) 55

DTG and DTA studies on fungical polysaccharides
C. Ramos-Sanchez, J.A. Leal, J. Martin-Gil and F.J. Martin-Gil (Spain). 61

DTG and DTA studies on sugar derivatives
F.J. Rey, C. Ramos-Sanchez, M.L. Rodriguez-Mendez, J. Martin-Gil and F.J. Martin-Gil (Spain) 67

DTG and DTA studies on amino acids
L. Rodriguez-Mendez, F.J. Rey, J. Martin-Gil and F.J. Martin-Gil (Spain) 73

Application of thermal methods for analysis of oils and oil products
I. Tiunova (Israel) 79

Characterisation of aged paint films by differential scanning calorimetry
M. Odlyha (UK) 85

Study on the effect of emulsifier on thermal behaviour of concentrated O/W emulsions
G. Rasulić, S. Jovanović and P. Dokić (Yugoslavia) 91

Polymorphic transitions in hydrogenated canola oil in presence of surfactants
R. Shelef and N. Garti (Israel) 97

Thermal analysis by DSC on organic crystals
Chang Youming, Liu Tongming, Niang Manand and Zhang Zhongliang
(P. R. China) 107

Polymer Science:

Lifetime prediction for polymers from thermal analytical experiments — problems and how to deal with some of them
J.H. Flynn (USA) 115

Kinetics of non-isothermal crystallization of oligoethylenetetraphthalate-oligooxyethylene block copolymers
B.G. Bogdanov, M.G. Stoyanova and M.Chr. Michailov (Bulgaria) 121

A kinetic study of the thermal degradation of poly(dihexyl itaconate)
I.G. Popović (Yugoslavia) 127

Crystallization kinetics of dyed nylon 6
A. Włochowicz and M. Eder (Poland) 133

Thermal properties and crystallization kinetics of PP/$CaCO_3$ and PP/EPDM/$CaCO_3$ composites
B. Žerjal, V. Musil, B. Pregrad and T. Malavašič (Yugoslavia) 139

Polyamic acid esters characterized by thermogravimetric analysis
B.J. Bachman and F.M. Houlihan (USA) 145

Glass transition temperatures of substituted polyoxetanes
A. Bello and E. Perez (Spain) 155

Thermal analysis of thermoplastic polymers
S.Z.D. Cheng and B. Wunderlich (USA) 161

Thermal analysis methods in the study of some retard macromolecular drugs
M. Daringa, S. Dumitriu, M. Popa and M. Dumitriu (Romania) 167

On the thermal stability of some new polyazines and polyazomethines (II)
M. Dumitriu, M. Daringa, M. Pastravanu, Cr. Dumitriu and T. Lixandru (Romania) 177

Thermal analysis of epoxide film adhesives
B.C. Ennis, P.J. Pearce and C.E.M. Morris (Australia) 187

Thermal analysis and molecular weight dependence on glass transition of poly-(ditrimethylene terephthalate)
C.C. Gonzalez, J.M. Pereña and A. Bello (Spain) 195

Simultaneous differential scanning calorimetry and reflected light intensity measure-ments in polymer studies
P.J. Haines and G.A. Skinner (UK) 201

Determination of the principal defect site responsible for Saran degradation using thermogravimetric analysis
B.A. Howell (USA) 207

Polymerization of methyl methacrylate and ethyl methacrylate in different solvents studied by DSC
T. Malavašič, U. Osredkar, I. Anžur and I. Vizovišek (Yugoslavia)..... 217

Isothermal crystallization behaviour of poly(ether-ether-ketone) (PEEK) and its carbon fiber composite
Mingbi Qi, Xiaonan Xu, Jun Zheng, Wei Wang and Zongneng Qi (P. R. China) 223

Thermal characterisation of bismaleimide-diamine adduct polymers
K.N. Ninan and K. Krishnan (India) 231

The influence of trioctyl methyl ammonium salts on the decomposition of initiators studied by DSC
A. Perdih, T. Malavašič and I. Vizovišek (Yugoslavia)..... 237

Thermoanalytical study on some film-forming quick-drying and waterproof products
M. Popescu and A. Simion (Romania)..... 243

Polyesters: phase behavior in binary blends: amorphous, crystalline, liquid crystals, and on transreaction (Plenary Lecture)
R.S. Porter (USA) 251

The use of TGA to study thermal ageing effects of oriented polypropylene
A. R. Horrocks and J.A. D'Souza (UK) 255

Calorimetric analysis of the curing behavior of an unsaturated polyester resin using different catalytic systems
J.M. Salla, X. Ramis, J.L. Martin and A. Cadenato (Spain) 261

Thermoanalytical investigations on curing and decomposition of methyl silicone resin
O. Schneider (F. R. Germany)..... 269

Use of thermal analysis in the optimization of polymeric diffusion barriers in controlled release delivery systems
E. Selinger and C.J. Brine (USA) 275

Thermal shrinkage stress relaxation in PET high speed spun yarns
D. Selivansky (Israel) 283

Thermal analysis of epoxy powder coatings
J. Sickfeld and D. Neubert (Germany) 291

Modification in thermal decomposition products of polymers by catalytic pyrolysis
Cr.I. Simionescu, C. Vasile, P. Onu, M. Sabliovschi, G. Moroi, V. Barboiu, D. Ganju and M. Florea (Romania)... 301

Evaluation of outgassing processes of plastics and rubbers using on-line thermal desorption GC-FTIR-MS
J.A.J. Jansen, W.E. Haas, H.G.M. Neutkens and A.J.H. Leenen (The Netherlands) 307

The differential scanning calorimetric study on potential mid-temperature curing reagent system for epoxy resins
Guo-Liang Cui and Wen-Ju Wang (P.R. China) 313

Pyrolysis and Combustion:

Low-pressure and high-pressure pyrolysis
H. Egsgaard and L. Carlsen (Denmark) 321

Comparative TGA and DSC studies of oil shales
M. Levy and R. Kramer (Israel) 327

A comparative thermoanalytical study of low-temperature reactivity of brown coal with dioxygen and radiofrequency-activated oxygen
A. Martinez-Alonso and J.M.D. Tascon (Spain) 333

Study on the burning characteristics of the combustible materials based on carbon black and cellolignine by thermal analysis method
M. Popescu and A. Simion (Romania) 339

An equilibrium analysis of combustion of industrial waste materials
S. Sharon (Israel) 347

Oil shale pyrolysis — a new approach to the kinetic investigation of different kerogen type samples
D. Skala, M. Sokić and H. Kopsch (Yugoslavia and F. R. Germany) 353

The study of coal by thermal analysis, advantages and disadvantages
J. Wieckowska (Poland) 359

INSTRUMENTATION AND TECHNIQUES

Development of a new equipment for using the constant rate thermal analysis (CRTA) under flow of inert or reactive gases
J. Arellano, J.M. Criado and C. Real (Spain) 365

Principles of the optical differential thermal analysis (ODTA)
J.L. Caslavsky (USA) 371

Applications of the optical differential thermal analysis
J.L. Caslavsky (USA) 377

Development of a new laser interferometric dilatometer and its application to low expansion materials
R. Kato, T. Azumi, S. Sekino and A. Maesono (Japan) 383

A new DSC for high heating and cooling rates measurements
K. Hirano, T. Ohshima, H. Okamoto, R. Kato and A. Maesono (Japan) 389

Weighing in free suspension and its application in thermogravimetry and in the determination of surface areas and the density of porous solids
Th. Gast, E. Hoinkis, U. Müller and E. Robens (F. R. Germany) 395

Comparison of temperature response within and between power compensated and differential temperature DSC instruments
R.M. Flynn, J.H. Flynn and T.J. Bent (USA) 401

Automated moisture evolution analysis (MEA)
M. Todoki, K. Taniguchi, T. Hosoi and K. Ishikiriyama (Japan) 407

APPLIED CHEMISTRY

A thermo-analytical study of the pyrotechnic reactions of black powder and its constituents
M.E. Brown and R.A. Rugunanan (South Africa) 413

A study on thermal behaviour of some commercial explosives
Md. Nabiullah, R.N. Gupta, B. Singh and P.K. Gandopadhyay (India) 419

A study of reaction between RDX and urea by a single non-isothermal DSC curve
Rongzu Hu, Zhengquan Yang and Yanjun Liang (P.R. China) 429

Utilization of differential scanning calorimetry technique for determination of high sulfur content
M.L.G. Ficara and E. Moreira (Brazil) 435

Mathematical modelling of industrial reactions using thermoanalytical methods
J.A. Irabien and M.I. Ortiz (Spain) 441

The use of thermal analysis in water treatment related problems
M.J.A. Vennekens and C.R.I. Odding (South Africa) 445

Safety screening of chemicals
G. Widmann and K. Vogel (Switzerland) 451

DSC study of chemically modified porous silica powders
M. Odlyha, S.O. Akapo and C.F. Simpson (UK) 457

Author Index 462
Subject Index 464

PART A. INORGANIC CHEMISTRY — *Thermochimica Acta* 133 (1988)

PART C. PHYSICAL CHEMISTRY, MINERALS, ZEOLITES — *Thermochimica Acta* 135 (1988)